

msi FUNTORO



UVC LED Sterilization System

A HEALTH SHIELD AGAINST VIRUSES AT POST-EPIDEMIC ERA

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For External Presentation Only

The Best Solution In the Post-Pandemic Era

Safe, Healthy and Eco-friendly

With the outbreak of COVID-19 globally, all governments and companies are making efforts to prevent the spread of epidemic. In view of this, MSI has developed the world's most powerful air sterilization system, to offer a safer and antibacterial environment for transportation and commercial sectors.

Through the technology of **UV-C light (275nm)** irradiation, the system can **inactivate 99%** of viruses and bacteria in the air circulating indoors and allows continuous operation for 24 hours **without being harmful to human body**. Besides, featured with **negative ions** and low noise level, the system helps to improve air quality and enable a more comfortable environment for people.

Product Benefits



Safety

- UV-C LED sterilization
- **Harmless to human body**
- Antibacterial environment
- Shockproof design
- High stability & reliability



Comfort

- Low noise level
- **Negative ionization**
- Breathing light design
- Remove odor molecules in the air
- Eliminate dust & mildew



Energy Saving

- Low power consumption
- Instant on & off
- No need for system warm-up
- Long lifetime operation
- **Low maintenance cost**



Eco-friendly

- Non-toxic
- Mercury-free
- **No ozone generation**
- No chemical pollution

Product Features



UV-C LED Sterilization
With 275nm wavelength



Negative Ionization
Improve air quality



LED Indicator
For easy maintenance



99% Inactivation Rate
of virus & bacteria



Breathing Light Design



Ceiling Design
For easy installation



Continuous Working
During operation



Long Lifetime Operation
Up to 5 years



12V/24V Power Design



Unique Aerodynamics
Improve sterilization efficiency



Low Noise Level
Increase passenger comfort



100V~240V AC adapter

UV-C LED Sterilization & Research

The length of 275 nm is the optimal wavelength in disinfecting the virus

By utilizing Everlight's UVC (275nm) LED module at high density of 240mW, MSI UVC LED sterilization system has been proven to be capable of inactivating 99.9% of bacteria and viruses quickly and effectively.

Scientifically Proven and Research

- **Taiwan:** Everlight's UVC LED for COVID-19 (SARS-CoV-2) experiment with Academia Sin of Taiwan
- **Korea:** ETi and Seoul Viosys Violeds Technology Demonstrated to Kill 99% of Coronavirus (SARS-CoV-2)
- **USA:** Signify and Boston University validate effectiveness of Signify's UV-C light sources on inactivating the virus
- **Israel:** Tel Aviv University (TAU) - LED lights found to kill coronavirus: Global first in fight against COVID-19

Minamata Convention on Mercury

- **United Nations treaty:** signed in 2013 and effective in 2017
The Minamata Convention provides controls over a myriad of products containing mercury, the manufacture, import and export of which will be altogether prohibited by 2020.
- **European Union:** EU Regulation 2017/852 on mercury
- **Taiwan Regulation:** the manufacture, import and export of any products containing mercury are prohibited from Jan 1, 2021 on.

UV Radiation Required for Bacteria & Virus Inactivation

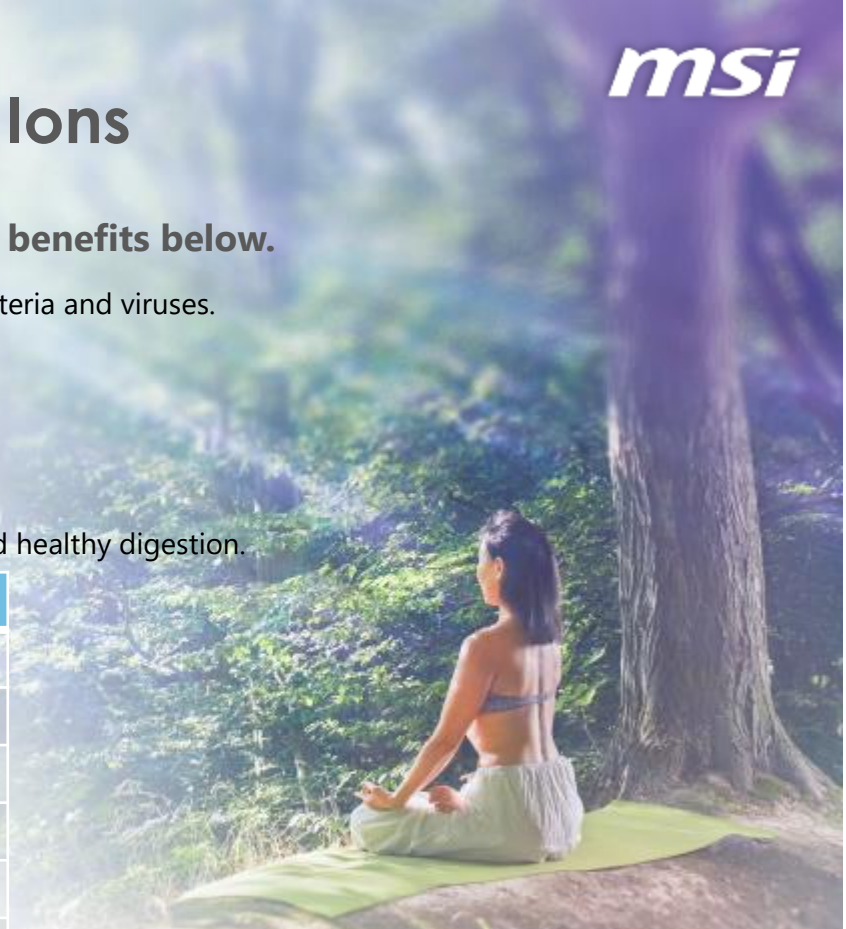
For the common Influenza virus, it takes **less than 1.5 seconds** to inactivate by MSI UVC LED sterilization system, while Novel Coronavirus Pneumonia (**COVID-19**) takes only 7 seconds around to be inactivated.

Scientific Name	Type	Disease	UV Required ($\mu\text{WSec}/\text{cm}^2$)	Exposure Time (Sec)
Novel Coronavirus Pneumonia	Virus	Coronavirus (COVID-19)	30,000	6.66
Bacillus subtilis spores	Bacteria	-----	22,000	4.88
Bacteriophage	Virus	-----	6,600	1.46
Coxsackie virus	Virus	Gastroenteritis	6,300	1.4
Shigella spores	Bacteria	Bacillary dysentery	4,200	0.93
Escherichia	Bacteria	Food poisoning	6,600	1.46
Fecal coliform	Bacteria	Intestinal infection	6,600	1.46
Hepatitis A virus	Virus	Hepatitis	8,000	1.77
Influenza virus	Virus	Catch colds	6,600	1.46
Legionella pneumopila	Bacteria	legionellosis infection	12,300	2.73
Salmonella typhi	Bacteria	Typhoid	7,000	1.55
Staphylococcus aureus	Bacteria	Toxic shock syndrome	6,600	1.46
Streptococcus spores	Bacteria	Pharyngitis	3,800	0.84

High Concentration of Negative Ions

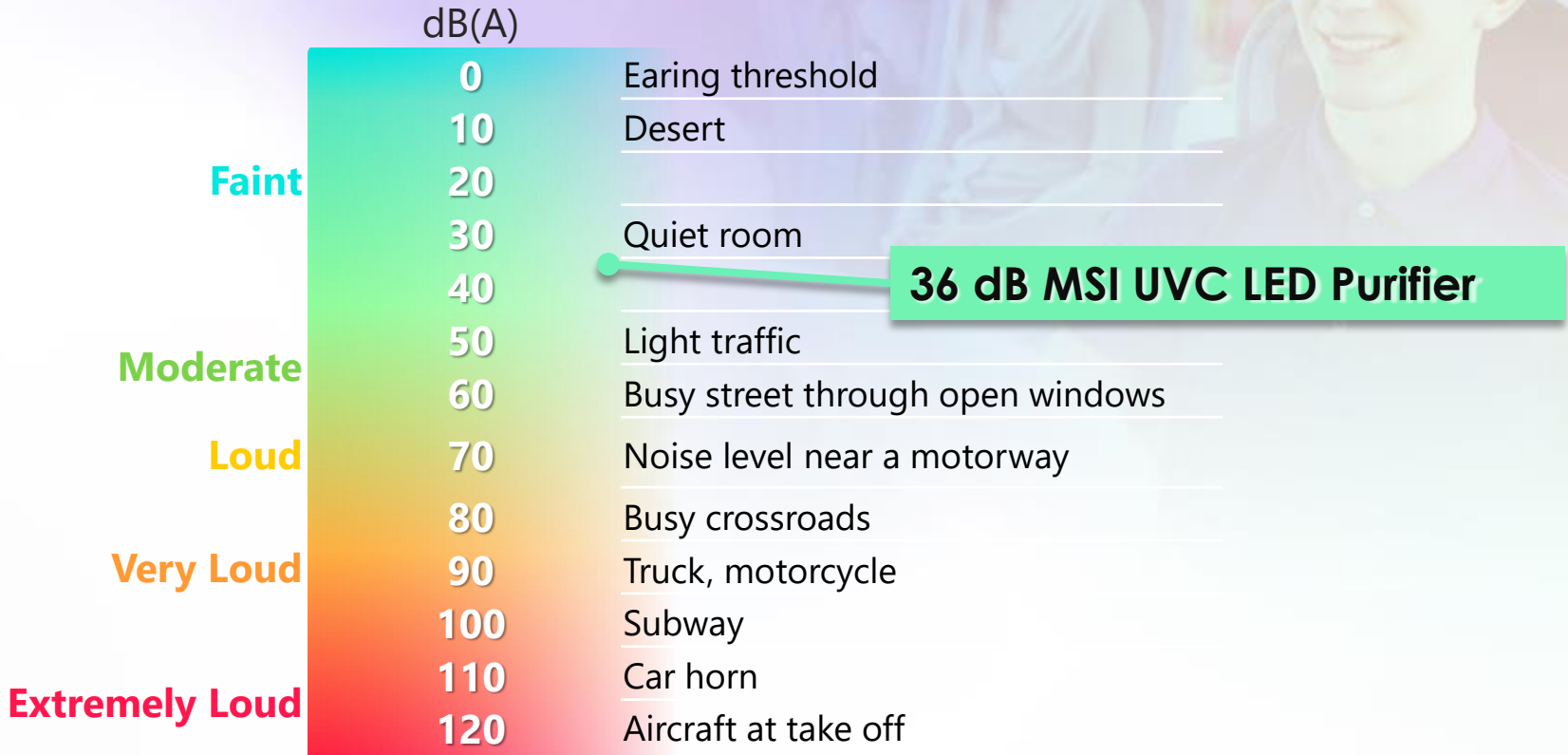
- **Our system releases negative ions up to 5 millions with benefits below.**
 - ✓ They clear the air of airborne allergens such as pollen, mold spores, bacteria and viruses.
 - ✓ They clear the air of dust, pet dander and cigarette smoke.
 - ✓ They neutralize free radicals ; they revitalize cell metabolism.
 - ✓ They enhance immune function; they purify the blood.
 - ✓ They balance the autonomic nervous system, promoting deep sleep and healthy digestion.

Area	Negative ions (ions/cm ³)
Forests and waterfall	50000
Mountains and sea	5000
Suburbs and field	700~1500
Urban parks	400~600
Urban greening streets	100~200
Urban residential rooms	40~50
Indoors with air conditioning	0~25



There are about 2 millions of negative ions existing in the environment upon the circumstance that negative ions do not disappear.

Low Noise Level for More Comfort



Unique Product Design



Comprehensive Purification

- Utilize light reflection range
- Maximize sterilization efficiency

Stable Bracket

- Flexibility & customization
- Can bear 5 times the weight of device
- Easy to install and use

Airflow Guide Wing

- Increase air volume
- Minimize noise
- Improve air circulation

Built-in Filter

Prevent insects and dust from covering the light to affect the sterilization efficiency and lifespan

LED Indicator

- Working status
- Replacement of parts
- Breathing light

Product Specification

UVC Wavelength(λ)	275nm
UVC LED	240mW (30mW/pcs x 8)
Power Rating	30W
Negative Ions (max)	5 millions/cm ³
Air Volume	14 CFM
Sound Level	36 dB
LED Indicator	Blue: Power on Red: UVC LED replace regularly Purple: UVC LED malfunction Orange: Filter cleaning White: Fan malfunction
Bactericidal Activity (avg)	1500 uWsec/cm ²
Bactericidal Activity (max)	4500 uWsec/cm ²
Product Lifespan	Up to 5 years
Dimension(s)	445 x 130 x 137 mm
Weight	1.6 kg



Application - Taxi

- Installation: 1 set for taxi, van, mini van or passenger car



Application – Commercial Building

- Installation: 1 set for each small meeting room



Application – Commercial Building

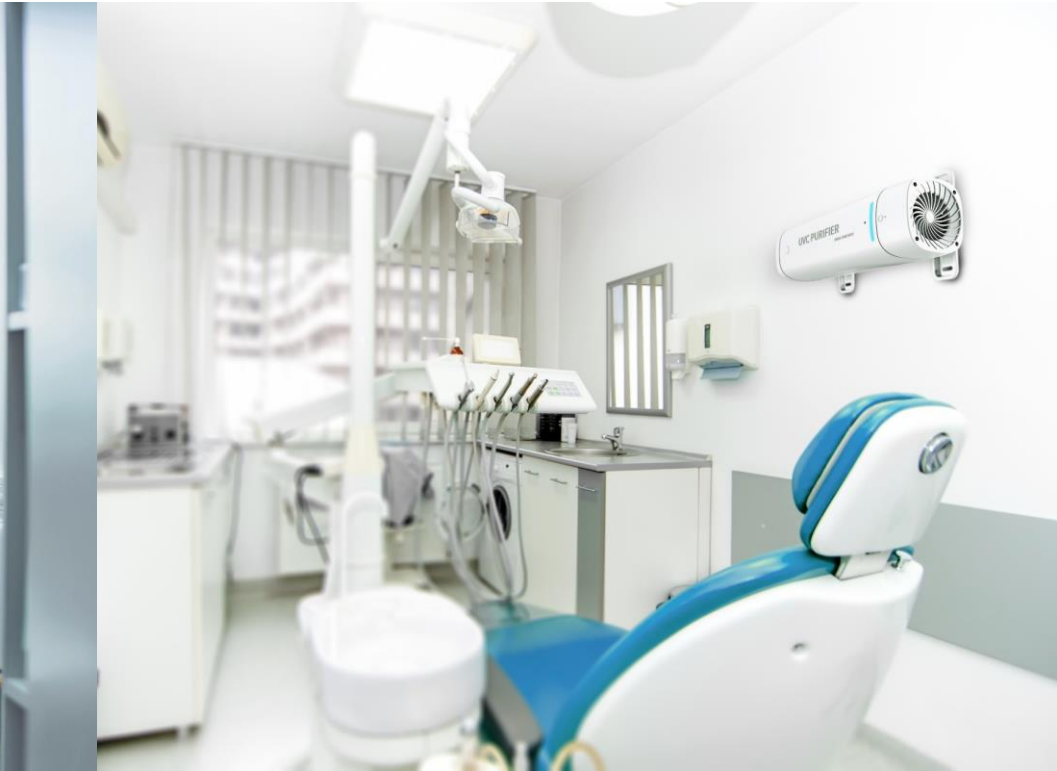
- Installation: 1 set for each small meeting room



Application – Consulting Room & Dental Clinic

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- Installation: 1 set for one consulting room



Application – Ward

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- Installation: 1 set for one ward room



Application – Quarantine Hotel

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- Installation: 1 set for each quarantine hotel room



Application - Bus & Coach

- Length of vehicle: <10M, 1 set for each bus
- Length of vehicle: 10M~15M, 1~2 sets for each bus

